

Remarks

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1-3, 5-16, 18-31, and 33-43 are pending in this application. Claims 1, 12, 24, 29 and 41 are independent. No claims have been allowed. Claims 1-3, 6-12, 15, 19, 24, 29-30 and 33-42 have been amended. Claim 27 has been canceled. Dependent claims 44-48 have been added.

Cited Art

The Action cites U.S. Pat. No. 6,512,745 B1 to Abe et al. ("Abe"), U.S. Pat. No. 6,389,555 B2 to Purcell et al. ("Purcell"), U.S. Pat. No. 6,625,118 B1 to Hadi Salim et al. ("Hadi Salim"), U.S. Pat. No. 5,457,687 to Newman ("Newman") and U.S. Pat. No. 6,295,294 B1 to Odlyzko ("Odlyzko").

Section 103 Rejections

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP § 2142.)

Motivations to combine or modify references must come from the references themselves or be within the body of knowledge in the art. (*See*, MPEP § 2143.01.)

Patentability of claims 1-3, 5-7, 9-15, 22-29, 31, 33-34 and 36-43 under § 103(a)

The Action rejected claims 1, 5-7, 9-12, 15, 24, 27, 29, 33, 34, 36-41 and 43 under 35 U.S.C § 103(a) as unpatentable over Abe in view of Newman.

Claim 1

As amended, claim 1 is directed to a computer implemented method for alleviating congestion in a network where the source and destination are connected via an aggregate of

related channels within the same path through the network. More particularly, amended claim 1 reads as follows:

A computer-implemented method comprising:
receiving a signal indicative of an occurrence of an ECN event caused by congestion within a channel of an aggregate of related channels connecting a source to a destination via a path through a network, wherein the signal indicating the ECN event is detectable in the source, the destination and the network; and
based on the signal indicating the ECN event occurrence, selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough for alleviating the congestion.

The Abe and Newman references fail to establish a prima facie case of obviousness because they do not teach or suggest all limitations of claim 1. Specifically, switching from a congested route to a non-congested route as taught by Abe fails to teach or suggest "receiving a signal indicative of an occurrence of an ECN event caused by congestion within a channel of an aggregate of related channels connecting a source to a destination via a path through a network ... based on the signal ... selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough for alleviating the congestion."

Abe describes a "connection-oriented core network" and a number of "permanent virtual routes" which connect the edge nodes. Abe col. 3, lns. 32-37. The routes described by Abe do not take the same path through the network. In fact, the routes described by Abe take different paths through the network because they connect different nodes in the network. Abe col. 5, lns. 24-43; fig. 2; fig. 3. Because Abe describes routes which take different paths through the network, Abe does not teach or suggest "an aggregate of related channels connecting a source to a destination via a path through a network" as recited by claim 1.

Abe describes switching from one route (the "main system") to a different route (the "subsystem") in response to "congestion or an error." Abe col. 10, lns. 35-37; fig. 16. This is different from claim 1, which recites "selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough," because all of the "related channels" of claim 1 travel via the same path through the network. For instance, the specification at page 11, lines 9-13 describes an aggregate of related channels as follows:

As shown in FIG. 2, the network layer 206 includes an aggregate of related channels, including channels 218 and 220. The channels 218 and 220 are referred to as related according to a predetermined criteria, such that the channels connect

the source 200 to the destination 204 via the same path through the network layer 206. (Emphasis added).

Because Abe describes switching from one route to a different route (i.e., one path through the network to another path through the network) in order to alleviate congestion, Abe does not teach or suggest “selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough for alleviating the congestion” the “aggregate of related channels connecting a source to a destination via a path through a network” as recited by claim 1. Therefore, Abe does not teach or suggest all limitations of claim 1.

Newman also does not teach or suggest the claim limitation of “an aggregate of related channels connecting a source to a destination via a path through a network.” Newman describes a “virtual channel” which is the same as the route described by Abe because the virtual channel in Newman connects a source and destination by “forming a chain of nodes in the network.” Newman col. 7, lns. 57-60; col. 8, lns. 12-13; fig. 1; fig. 2. Therefore, Newman does not teach or suggest “an aggregate of related channels connecting a source to a destination via a path through a network” as recited by claim 1.

Furthermore, neither the “network management equipment” described in Abe for detecting errors or congestion in the “core network” which is separate from the “access networks” comprising the source and destination nor the backward explicit congestion notification of Newman teach or suggest “wherein the signal indicating the ECN event is detectable in the source, the destination and the network.” Abe col. 10, lns. 29-44; col. 6, lns. 4-19; Newman abstract. Abe does not teach or suggest that the error or congestion notification is detectable from the source or from the destination. Newman describes sending congestion signals “back to the sources” that are submitting traffic. Newman abstract. Even if Abe is modified to send an ECN event to the source, Abe and Newman still do not teach or suggest that the ECN event is detectable from all three of the source, destination, and network. Therefore, Abe and Newman do not teach or suggest “wherein the signal indicating the ECN event is detectable in the source, the destination and the network.”

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 1, Applicants believe that claim 1 as amended is not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claim 1 should be allowable over the cited art.

Claim 12

As amended, claim 12 is directed to a computerized system for alleviating congestion in a network where the source and destination are connected via an aggregate of related channels within the same path through the network layer. More particularly, amended claim 12 reads as follows:

A computerized system comprising:

a network layer having a path comprising an aggregate of related channels therethrough, and triggering an ECN event in response to congestion within one of the aggregate of related channels during transmission of a packet from a source having a source protocol layer to a destination having a destination protocol layer, wherein the triggered ECN event is detectable at the source, and the destination; and,

a policy mechanism to select at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough based on the ECN event for alleviating the congestion.

For the reasons set forth above with reference to claim 1, the Abe and Newman references, individually or in combination, fail to establish a prima facie case of obviousness because they do not teach or suggest all limitations of claim 12. Specifically, Abe and Newman do not suggest or teach “a network layer having a path comprising an aggregate of related channels therethrough.” Also, for the reasons set forth above with reference to claim 1, Abe and Newman do not suggest or teach “a policy mechanism to select at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough based on the ECN event for alleviating the congestion.”

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 12, Applicants believe that claim 12 as amended is not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claim 12 should be allowable over the cited art.

Claim 24

As amended, claim 24 is directed to a computer to execute a program which alleviates congestion in a network where the source and destination are connected via an aggregate of related channels within the same path through the network. More particularly, amended claim 24 reads as follows:

A computer comprising:

- a processor;
- a computer-readable medium;
- a protocol layer having an aggregate of related channels connecting a source to a destination via a path through a network, the aggregate of related channels including a congested channel; and
- a congestion policy program executed by the processor from the medium, wherein the congestion policy program is responsive to an ECN event triggered within the congested channel due to a congestion during transmission of packets from the source to the destination and wherein the ECN event is detectable within the source and the destination for selecting at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough based on the ECN event triggered within the congested channel to alleviate the congestion.

For the reasons set forth above with reference to claim 1, the Abe and Newman references, individually or in combination, fail to establish a prima facie case of obviousness because they do not teach or suggest all limitations of claim 24. Specifically, Abe and Newman do not suggest or teach “a protocol layer having an aggregate of related channels connecting a source to a destination via a path through a network, the aggregate of related channels including a congested channel.” Also, for the reasons set forth above with reference to claim 1, Abe and Newman do not suggest or teach “selecting at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough based on the ECN event triggered within the congested channel to alleviate the congestion.”

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 24, Applicants believe that claim 24 as amended is not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claim 24 should be allowable over the cited art.

Claim 29

As amended, claim 29 is directed to a machine-readable medium for causing performance of a method which alleviates congestion in a network where the source protocol layer and destination protocol layer are connected via an aggregate of related channels within the same path through the network. More particularly, amended claim 29 reads as follows:

A machine-readable medium having processor instructions stored thereon for execution by a processor, the medium causing performance of a method

comprising:

- receiving feedback of an ECN event triggered due to a congestion occurrence in one of an aggregate of related channels connecting a source protocol layer to a destination protocol layer via a path through a network, wherein the feedback is detectable at the source and the destination; and,
- selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough, based on the ECN event for alleviating the congestion.

For the reasons set forth above with reference to claim 1, the Abe and Newman references, individually or in combination, fail to establish a prima facie case of obviousness because they do not teach or suggest all limitations of claim 29. Specifically, Abe and Newman do not suggest or teach “an aggregate of related channels connecting a source protocol layer to a destination protocol layer via a path through a network.” Also, for the reasons set forth above with reference to claim 1, Abe and Newman do not suggest or teach “selecting at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough, based on the ECN event for alleviating the congestion.”

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 29, Applicants believe that claim 29 as amended is not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claim 29 should be allowable over the cited art.

Claim 41

As amended, claim 41 is directed to a computer which alleviates congestion in a network where the source protocol layer and destination protocol layer are connected via an aggregate of related channels within the same path through the network layer. More particularly, amended claim 41 reads as follows:

A computer comprising:

- a source protocol layer;
- a plurality of filters;
- an aggregate of related channels connecting a source protocol layer to a destination protocol layer via a path through a network layer, each channel associated with a filter; and,
- a policy mechanism responsive to an ECN event triggered due to a congestion during transmission of packets from the source protocol layer to the destination protocol layer via the network layer, wherein the ECN event is detectable within the source protocol layer and the destination protocol layer for selecting, based on the ECN event, at least one channel of the aggregate of related

channels to have decreased packets transmitted therethrough from the source protocol layer through the plurality of filters to alleviate the congestion.

For the reasons set forth above with reference to claim 1, the Abe and Newman references, individually or in combination, fail to establish a prima facie case of obviousness because they do not teach or suggest all limitations of claim 41. Specifically, Abe and Newman do not suggest or teach “an aggregate of related channels connecting a source protocol layer to a destination protocol layer via a path through a network layer, each channel associated with a filter.” Also, for the reasons set forth above with reference to claim 1, Abe and Newman do not suggest or teach “selecting, based on the ECN event, at least one channel of the aggregate of related channels to have decreased packets transmitted therethrough from the source protocol layer through the plurality of filters to alleviate the congestion.”

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 41, Applicants believe that claim 41 as amended is not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claim 41 should be allowable over the cited art.

Claims 2-3, 5-7, 9-11, 13-15, 22-23, 25-28, 31, 33-34, 36-40 and 42-43

Claims 2-3, 5-7 and 9-11 ultimately depend on claim 1, claims 13-15 and 22-23 ultimately depend on claim 12, claims 25-26 and 28 ultimately depend on claim 24, claims 31, 33-34 and 36-40 ultimately depend on claim 29 and claims 42-43 ultimately depend on claim 41. Thus, at least for the reasons set forth above with regard to claims 1, 12, 24, 29 and 41, claims 2-3, 5-7, 9-11, 13-15, 22-23, 25-26, 28, 31, 33-34, 36-40 and 42-43 should be in condition for allowance.

Claim 27 has been cancelled.

Examiner also rejected claim 43 under § 103(a) in view of the combination of Abe, Newman and Odlyzko. Action p. 5. Presumably, this second rejection was a mistake. However, to the extent the Action relies on the combination of Abe, Newman and Odlyzko, Applicants contend that the combination does not recite the limitations of claim 43.

Patentability of claims 16, 18, 19, 20 and 21 over Abe in view of Newman and Purcell under § 103(a)

The Action rejected claims 16, 18, 19, 20 and 21 under 35 U.S.C § 103(a) as unpatentable over Abe in view of Newman and Purcell.

Claims 16 and 20

The Action concluded that, in claims 16 and 20, it would have been obvious to one of ordinary skill in the art to modify Abe to locate the policy mechanism in either the source or the destination by using Purcell.

Claims 16 and 20 depend on claim 12 and thus, for the reasons mentioned above with respect to claim 12, claims 16 and 20 also should be patentable. Furthermore, the fail-over mechanism described by Purcell is not the same as “a policy mechanism to select at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough based on the ECN event for alleviating the congestion” as recited in claim 12.

Purcell describes computer systems connected by a “primary media link” and a “backup media link” where the backup media link is a “redundant pathway” connecting the computers and where the system “automatically switch[es] over to from the nonfunctional primary media link 12A to the redundant media link 12B” in response to failure of the primary media link. Purcell col. 5, lns. 18-28. The fail-over capability described by Purcell does not “select” anything; it merely switches from a primary to a backup link. In fact, no “selection” is needed because as taught by Purcell there is only one option upon failure, which is to switch to the backup link. In contrast, claim 12 recites “a policy mechanism to select at least one channel of the aggregate of related channels other than the congested channel to have decreased transmission of packets therethrough.” Claim 12 does not recite switching between links; it recites using “a policy mechanism to select at least one channel of the aggregate of related channels.” Therefore, Purcell does not describe a policy mechanism, as recited in claim 12, located at the source and destination.

Because the cited references, individually or in combination, fail to describe at least one claim limitation of claim 16 and claim 20, Applicants believe that claims 16 and 20 as amended are not subject to a § 103(a) rejection and request that the rejection be withdrawn. Thus, claims 16 and 20 should be allowable over the cited art.

Claims 18, 19 and 21

Claims 18 and 19 depend on claim 16, and ultimately upon claim 12. Claim 21 depends on claim 20, and ultimately upon claim 12. Thus, at least for the reasons set forth above with regard to claims 12, 16 and 20, claims 18, 19 and 21 should be in condition for allowance.

Patentability of claims 8, 30 and 35

The Action does not provide a specific rationale for the rejection of claims 8, 30 and 35. Claim 8 depends on claim 1, and claims 30 and 35 depend on claim 29. Therefore, for the reasons set forth above with regards to independent claims 1 and 29, claims 8, 30 and 35 should be in condition for allowance.

New Claims 44-48

Claims 44-48, which depend on claims 1, 12, 24, 29 and 41 respectively, should be patentable for the reasons set forth above. Claims 44-48 further recite that the aggregate of related channels comprises a video channel and an audio channel. For instance, the specification at page 11, lines 9-14 describes the aggregate of related channels as follows:

As shown in FIG. 2, the network layer 206 includes an aggregate of related channels, including channels 218 and 220. The channels 218 and 220 are referred to as related according to a predetermined criteria, such that the channels connect the source 200 to the destination 204 via the same path through the network layer 206. For example, the channels may be related because they transmit the audio and video, respectively, of a teleconference, from the source 200 to the destination 204.

Claim 44

Claim 44, which is dependent on claim 1, is directed to a computer implemented method for alleviating congestion in a network where the source and destination are connected via an aggregate of related channels comprising a video channel and an audio channel.

Claim 45

Claim 45, which is dependent on claim 12, is directed to a computerized system for alleviating congestion in a network where the source and destination are connected via an aggregate of related channels comprising a video channel and an audio channel.

Claim 46

Claim 46, which is dependent on claim 24, is directed to computer to execute a program which alleviates congestion in a network where the source and destination are connected via an aggregate of related channels comprising a video channel and an audio channel.

Claim 47

Claim 47, which is dependent on claim 29, is directed to a machine-readable medium for causing performance of a method which alleviates congestion in a network where the source and destination are connected via an aggregate of related channels comprising a video channel and an audio channel.

Claim 48

Claim 48, which is dependent on claim 41, is directed to a computer which alleviates congestion in a network where the source and destination are connected via an aggregate of related channels comprising a video channel and an audio channel.

Conclusion

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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